

# Claims

- [c1] 1. A pixel structure of an active organic light emitting diode, comprising:  
an organic light emitting diode;  
a data-line;  
a scan-line;  
a switch thin film transistor having a first gate terminal, a first source terminal, a first drain terminal and a first lightly doped drain region, wherein the first gate terminal is coupled to the scan-line and the first source terminal is coupled to the data-line;  
a control thin film transistor having a second gate terminal, a second source terminal, a second drain terminal and a second lightly doped drain region, wherein the second gate terminal is coupled to the organic light emitting diode and the first lightly doped drain region and the second lightly doped drain region have different doped concentrations; and  
a capacitor coupled to the first drain terminal and to the second gate terminal.
- [c2] 2. The pixel structure of an active organic light emitting diode of claim 1, wherein the doped concentration of the

second lightly doped drain terminal is higher than that of the first lightly doped drain region.

- [c3] 3. The pixel structure of an active organic light emitting diode of claim 1, wherein the switch thin film transistor is a P-type low-temperature poly-silicon thin film transistor.
- [c4] 4. The pixel structure of an active organic light emitting diode of claim 3, wherein the control thin film transistor is a P-type low-temperature poly-silicon thin film transistor.
- [c5] 5. The pixel structure of an active organic light emitting diode of claim 1, wherein the switch thin film transistor is an N-type low-temperature poly-silicon thin film transistor.
- [c6] 6. The pixel structure of an active organic light emitting diode of claim 5, wherein the control thin film transistor is an N-type low-temperature poly-silicon thin film transistor.
- [c7] 7. A pixel structure of an active organic light emitting diode, comprising:
  - an organic light emitting diode;
  - a data-line;
  - a scan-line;

a switch thin film transistor having a first gate terminal, a first source terminal, a first drain terminal and a first lightly doped drain region, wherein the first gate terminal is coupled to the scan-line and the first drain terminal is coupled to the data-line;

a control thin film transistor having a second gate terminal, a second source terminal, a second drain terminal and a second lightly doped drain region, wherein the second gate terminal is coupled to the first source terminal, the second drain terminal is coupled to the organic light emitting diode and the first lightly doped drain region and the second lightly doped drain region have different lengths; and

a capacitor coupled to the first drain terminal and to the second gate terminal.

[c8] 8. The pixel structure of an active organic light emitting diode of claim 7, wherein the first lightly doped drain terminal is longer than the second lightly doped drain region.

[c9] 9. The pixel structure of an active organic light emitting diode of claim 7, wherein the switch thin film transistor is a P-type low-temperature poly-silicon thin film transistor.

[c10] 10. The pixel structure of an active organic light emitting

diode of claim 9, wherein the control thin film transistor is a P-type low-temperature poly-silicon thin film transistor.

[c11] 11. The pixel structure of an active organic light emitting diode of claim 7, wherein the switch thin film transistor is an N-type low-temperature poly-silicon thin film transistor.

[c12] 12. The pixel structure of an active organic light emitting diode of claim 11, wherein the control thin film transistor is an N-type low-temperature poly-silicon thin film transistor.

[c13] 13. A pixel structure of an active organic light emitting diode, comprising:  
an organic light emitting diode;  
a data-line;  
a scan-line;  
a switch thin film transistor having a first gate terminal, a first source terminal, a first drain terminal and a first lightly doped drain region, wherein the first gate terminal is coupled to the scan-line and the first drain terminal is coupled to the data-line;  
a control thin film transistor having a second gate terminal, a second source terminal and a second drain terminal, wherein the second gate terminal is coupled to the

first source terminal and the second drain terminal is coupled to the organic light emitting diode; and a capacitor coupled to the first drain terminal and to the second gate terminal.

[c14] 14. The pixel structure of an active organic light emitting diode of claim 13, wherein the switch thin film transistor is a P-type low-temperature poly-silicon thin film transistor.

[c15] 15. The pixel structure of an active organic light emitting diode of claim 14, wherein the control thin film transistor is a P-type low-temperature poly-silicon thin film transistor.

[c16] 16. The pixel structure of an active organic light emitting diode of claim 13, wherein the switch thin film transistor is an N-type low-temperature poly-silicon thin film transistor.

[c17] 17. The pixel structure of an active organic light emitting diode of claim 16, wherein the control thin film transistor is an N-type low-temperature poly-silicon thin film transistor.